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An anomaly in the crystallisation rate of bimodal poly(ethylene oxide) weight distributions JESSICA L. CARVALHO, SARA L. CORMIER, KARI DALNOKI-VERESS, Department of Physics & Astronomy and the Brockhouse Institute for Materials Research, McMaster University, Hamilton, ON, Canada, L8S 4M1 — We present results on the crystallisation of blends of poly(ethylene oxide) (PEO) of differing molecular weight, M_w. Previous studies probing PEO blends have mainly focused on blends of low M_w, for which integral chain folding is important, with very high M_w. The PEO samples used in this study consist of a blend with both M_w's well above the integral chain folding limit. In general, one would expect that such blends should show a monotonic decrease in spherulite growth rate, G, as the blend contains more high-$M_w$component. Our results however show a clear non-monotonic G, with a minimum in a plot of G as a function of the volume fraction. In short, blending a small amount of the low-M_w into the High- M_w PEO slows the growth kinetics. These results along with a possible mechanism will be discussed.

Jessica L. Carvalho
Dept. of Physics & Astronomy and the Brockhouse Institute
for Materials Research, McMaster University,
Hamilton, ON, Canada, L8S 4M1

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